

REMARKS

Applicant respectfully submits the Amendments and Remarks in order to place the present application in condition for allowance. Applicant respectfully requests favorable reconsideration of this application and the claims in view of the following Remarks.

To The Specification

The Examiner's objections to the specification have been noted. Each instance of the term "CYCLE EROSION" has been amended to be in capitalized font and is followed by the ® symbol to indicate use as a registered trademark. Further, the term "ACCESS" has been amended to be in capitalized font to indicate its use as a trademark. The specification also has been amended to add the identifier "database" after the term "ACCESSTM" to indicate the generic terminology for the ACCESSTM product.

In Response to the Examiner's objection, the label "Table II" has been added to identify the table in paragraph number 24. Applicant believes Applicant has addressed all the Examiner's objections with respect to the specification.

To The Abstract

The Examiner's objection to the Abstract is noted. Applicant has removed paragraph numbering from the Abstract. Applicant has also deleted the purported merits as suggested by the Examiner. Applicant asserts the Examiner's objections with respect to the Abstract have been fully addressed.

To The Drawings

The Examiner's objection in paragraph 1 of the Office Action regarding FIG. 4, is acknowledged. The solid black shading has been replaced with a striped pattern. Applicant believes Applicant has addressed the Examiner's objection with respect to the drawings.

To The Claims

Claims 1-20 stand rejected. Applicant has cancelled claims 2-7, 9, 13-14, and 16- 20. Claim 21 has been added. Claims 1, 8, 10-12, 15, and 21 are thus still pending. Applicant acknowledges the Examiner's objection under 37 CFR 1.75(a). Applicant has amended the remaining pending claims to better particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Claim 1 has been amended as follows. The preamble previously began, "A method for monitoring the operation efficiency *in a*". The terms "in a" were present as a typographical error and have been deleted. Further, claim 1 has been amended to show the availability value, performance value, quality erosion value, overall equipment effectiveness value, performance loss value, and quality loss value are *for the equipment*. Applicant believes this amendment should clear any confusion about these values in accordance with the Examiner's suggestions.

Rejections under 35 USC § 112

The Examiner has rejected claims 14 and 16-20 for being hybrid claims. Applicant has herein cancelled claims 14 and 16-20. The Examiner had not indicated claim 15 to be a hybrid claim, but, in an abundance of caution, Applicant has amended claim 15 to refer only to elements of a system to more fully illustrate that claim 15 is directed to a single category of statutory subject matter. Amended claim 15 is thus not believed to be a hybrid claim. Applicant believes Applicant has addressed each of the Examiner's objections under 35 USC § 112.

Rejections under 35 USC § 101

The Examiner has rejected claims 1-14, and 16-20 as being directed to non-statutory subject matter. Claims 2-7, 9, 13, 14, and 16-20 are herein cancelled. Claim 1 has been amended by adding that it is at least in part *a computer-aided method* to particular point out that the steps are being performed on a computer. Support for this amendment is found in the specification in paragraphs 15-17. Further a limitation has been added to achieve a practical application based on the computer-aided steps. Support for this amendment is found in the specification at paragraph 29.

Claim 1 has been rewritten to include the step previously found in now-cancelled, dependent claim 7. That step requires: *improving operational efficiency by having an operator view the graphical format display and having the operator take corrective action based on the graphical format display to improve the overall equipment effectiveness value*. This step shows a practical application being performed by an operator using the graphical data. This falls into the "Independent Physical Acts (Post-Computer Process Activity)" safe harbor noted in the

Examination Guidelines for Computer-Related Inventions (the “Guidelines”). The post calculation activity of the present invention is similar to the robot example stated in section IV(B)(2)(b)(i) of the Guidelines, which was identified as falling with a safe harbor:

A method of controlling a mechanical robot which relies upon storing data in a computer that represents various types of mechanical movements of the robot, using a computer processor to calculate positioning of the robot in relation to given tasks to be performed by the robot, and controlling the robot's movement and position based on the calculated position.

In claim 1, an operator is taking corrective action based on the graphical format display which was displayed from the calculated values of the previous steps. This is similar to “controlling the robot’s movement and position based on the calculated position.” Applicant therefore believes claim 1 clearly falls with a safe harbor provided by the Guidelines.

Further, claim 1 describes statutory subject matter because having an operator improve overall equipment efficiency through corrective action based on an OEE graphical format display is a tangible, practical, useful result. Support for this useful result is found in paragraph 29 of the specification in which it is described that an operator, even with their limited understanding of efficiency theory, lean manufacturing, ideal rate, or whatever other value may be of interest to engineering or management, can easily understand the graphical format display and take corrective action based on it.

Applicant believes that Applicant has shown at least one useful result from the claimed method. This showing is sufficient as stated in the Guidelines in section II(A), last paragraph:

The applicant is in the best position to explain why an invention is believed useful. Office personnel should therefore focus their efforts on pointing out statements made in the specification that identify all practical applications for the invention. Office personnel should rely on such statements throughout the examination when assessing the invention for compliance with all statutory criteria. An applicant may assert more than one practical application, but only one is necessary to satisfy the utility requirement.

Applicant believes the Amendments and Remarks address the Examiner's objection under 35 USC 101 with respect to claim 1. Claims 8 and 10-12 which depend from claim 1 are believed to similarly satisfy 35 USC 101. Thus, the Examiner's objections under 35 USC 101 for all pending claims are believed to be addressed.

Rejections under 35 USC § 103

The Examiner has rejected claim 1 under 35 USC § 103 in view of Pomorski in combination with Glawischnig. The Examiner notes that Pomorski discloses calculating OEE values, but does not disclose a graphical format display of such values. The Examiner argues that Glawischnig teaches the excepted feature.

The Applicant has amended claim 1 to include the step of: *“improving operational efficiency by having an operator view the graphical format display and having the operator take corrective action based on the graphical format display to improve the overall equipment effectiveness value.”* In the Examiner’s rejection to now-cancelled claim 7 which substantially contained the limitation now found in amended claim 1, the Examiner states that “it would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the techniques of Glawischnig to the invention of Pomorski ... because an operator can improve the overall equipment effectiveness such as by taking a shorter break, expediting shift turnover, etc.” Applicant’s currently amended claim 1 does not merely claim an operator improving OEE by taking breaks, etc. Rather, claim 1 describes displaying a graphical format display of OEE displayed from calculated OEE values to an operator so that the operator can take corrective action based on the graphical format display. This step is not disclosed in either reference.

Further, although Pomorski discloses calculating OEE-related values, and Glawischnig discloses a graph of OEE-related values, neither reference discloses having an *operator* view a graphical format display and taking corrective action based on that display. Rather, the articles describe management steps that can be taken to assess and improve OEE. The articles mention operator uptime as a variable in calculating OEE, but never describe displaying the OEE values, nor a graphical format display of OEE values, to operators so that the operators can take corrective action. Further, neither reference, either alone or in combination, provides any suggestion, motivation or incentive to modify the teachings to achieve the claimed method.

Applicant believes that claims 8, 10, and 11, which, as amended, depend from claim 1, are allowable for the same reasons as claim 1. Claim 8 also adds the further limitation of the corrective action be reducing the duration of a break. Claim 10 adds the further limitation of having the corrective action be reducing delays due to shift transitions. Claim 11 adds the further limitation of rewarding an operator who improves OEE. Claim 11 has been amended to specify that the equipment that is having its OEE improved is the equipment operated by the operator and that the operator is being rewarded for using the graphical format display to improve OEE. Applicant believes this limitation is neither disclosed in the cited references, alone or in combination, and has not been demonstrated to be inherent in the art.

Still pending claims 12 and 15 stand rejected in view of the combination of Pomorski, Glawischnig, and U.S. Patent No. 6,256,550 to Wu ("Wu"). The Examiner relies on Wu to show the operator or dispatcher of a production unit, like an implant center, can see the list with all lots waiting for production and maybe on a different screen the status of the available tools. However, although Wu appears to show a shop management system that shows OEE values in graphical format, Wu fails to show the step of claim 1 from which claim 12 depends, which is improving operational efficiency by having an operator view the graphical format display and having the operator take corrective action based on the graphical format display to improve the overall equipment effectiveness value. The references provide no suggestion, motivation or incentive to combine the references to include this limitation.

With respect to claim 15, claim 15 has been amended to specify that the graphical format display is a pie chart. Although Wu shows a histogram of OEE values available on a shop floor,

no motivation, incentive, or suggestion is shown to combine the pie chart of Glawischnig with the floor-access of Wu. The Examiner is respectfully invited to point out where such suggestion, if any, exists.

The use of a pie chart versus other more complex graphical formats may be necessary for efficient use by equipment operators. A pie chart is a simple representation of a whole, with divisions caused by various factors which can be easily interpreted by operators without the need to understand the details of factory planning and efficiency analysis. Applicant points to paragraph 29 of the specification where this was discussed:

An operator, even with their limited understanding of efficiency theory, lean manufacturing, ideal rate, or whatever other value may be of interest to engineering or management, can easily understand the following simple visually displayed concept. An operator wants to make the OEE wedge “bigger” and the other wedges smaller. An operator can see which non-OEE wedge is “big” and take steps accordingly. For example, if a wedge representing setup time looks “too big” to an operator, the operator may take some corrective action to improve the OEE value.

Applicant also discussed the goals of a simplified graphical format in the paragraph 5 of the specification:

Although the OEE value is a useful index in accessing production performance, the OEE value itself fails to quickly provide in an

easy-to-read, graphical manner, information about specific conditions contributing to productivity loss. It is desirable to have such information presented at a level understandable to the average equipment operator on the manufacturing floor so that such an operator can monitor or benchmark their productivity.

Although pie charts are shown in Glawishnig, there is no discussion of moving the chart to the shop floor at an operator location for efficient use by an operator. The complexity of the chart in combination with the other analysis charts and calculations of Glawishnig clearly show the analysis is intended for use by management or skilled technical analysts, not an equipment operator. Applicant respectfully invites the Examiner point out any purported motivation, incentive, or suggestion for combining these references.

Applicant has added claim 21 that builds on amended claim 1. Claim 21 particularly points out how an operator uses the wedges of the pie chart to take corrective action. Applicant believes the combination of claim 21 are not shown in any of the references, either alone or in combination, and therefore believes claim 21 is in condition for allowance. Support for claim 21 is found in the above-discussed paragraph 29 of the specification.

With the foregoing in mind, Applicant respectfully requests that the Examiner place the present application in condition for allowance.

Should the Examiner be of the opinion that further amendments or response is required, the Applicant encourages the Examiner to contact the undersigned attorney at the telephone number set forth below.

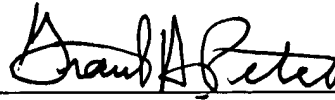
In re Appln. of Oskin
Application No. 10/685,084

Atty. Docket No. 30451-94753

Although no additional fees are believed to be due at this time, the Commissioner is authorized to charge any additional fees or deficiencies or credit any overpayments to Barnes & Thornburg LLP Deposit Account No. 12-0913 with reference to attorney docket number (30451-94753).

Respectfully submitted,

BARNES & THORNBURG LLP

A handwritten signature in black ink, appearing to read "Grant H. Peters", written over a horizontal line.

12/30/04

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